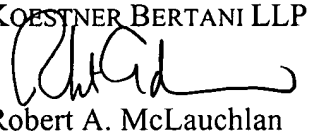
CONCLUSION

Applicants have now made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of the pending claims.

It is believed no additional fees are due with this submission, however, should any fees be determined to be due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Koestner Bertani LLP Deposit Account No. 50-2240.

Respectfully submitted,

KOESTNER BERTANI LLP



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IN THE CLAIMS

31. (Currently Amended) A system for vectoring a primary flow by varying an effective throat or sonic plane within a ducted primary flow, comprising:

an opening for accepting the primary flow;

at least one primary injector located wherein said at least one injector is inclined to oppose the primary flow up-stream of said effective throat or sonic plane;

at least one supplemental injector wherein said at least one supplemental injector is located downstream of the at least one primary injector, wherein said at least one supplemental injector is inclined to oppose the primary flow, and wherein the at least one primary and supplemental injectors provide a flow field opposed to a subsonic portion of the primary flow in order to vector the primary flow; and

at least one controller operable to direct said at least one primary and supplemental injector to provide a flow operable to vary the effective throat or sonic plane.

32. (Currently Amended) The system for vectoring a primary flow of Claim 31, further comprising:

a physical throat within a duct, wherein the physical throat comprises a region of lowest cross-sectional area, in the primary flow.

33. (Currently Amended) The system for vectoring a primary flow of Claim 32 wherein a plurality of primary injectors is located proximate to said physical throat.

34. Canceled.

35. (Currently Amended) The system for vectoring a primary flow of Claim 31 wherein injectors inject fluid asymmetrically, to redirect the primary flow along an intended vectoring plane.

36. (Currently Amended) The system for vectoring a primary flow of Claim 35 wherein a plurality of primary and secondary injectors inject fluidic pulses.

37. (Currently Amended) The system for vectoring a primary flow of Claim 33, wherein a plurality of secondary injectors are arranged to inject fluid to oppose the primary flow and in parallel to the intended vectoring plane.

38. (Currently Amended) The system for vectoring a primary flow of Claim 37 wherein the plurality of primary injectors and the plurality of secondary injectors inject fluid symmetrically, resulting in a change in a discharge coefficient in the nozzle.

39. Canceled.

40. (Currently Amended) The system for vectoring a primary flow of Claim 31 wherein injected fluid comprises compressed gas.

41. (Currently Amended) The system for vectoring a primary flow of Claim 31 wherein injected fluid comprises fuel.

42. (Currently Amended) The system for vectoring a primary flow of Claim 31, further comprising:

at least one controller, operable to direct said at least one primary injector and/or said at least one supplemental injector.

43. Canceled.

44. (Currently Amended) A method for vectoring a primary flow of fluid in a 3-D nozzle, comprising the steps of:

injecting fluid from a plurality of primary injectors opposed to a primary flow of the fluid and approximately parallel to an intended vectoring plane, the plurality of injectors located proximate to a throat;

injecting fluid from a plurality of supplemental injectors opposed to the primary flow wherein said second plurality of supplemental injectors are located downstream of the throat, and wherein the fluid injected by said primary and/or supplemental injectors varies or skews an effective throat or sonic plane of said 3-D nozzle.

45. Canceled.

46. (Currently Amended) The method of Claim 44, further comprising:

expelling from a second plurality of injectors the injection fluid in a direction inclined to oppose the primary flow of the fluid and approximately parallel to an intended vectoring plane, wherein said supplemental plurality of injectors are located proximate to the throat.

47. (Currently Amended) The method of Claim 44 wherein fluid is injected by said primary and/or supplemental injectors in fluidic pulses.

48. (Currently Amended) The method of Claim 44 wherein the injected fluid comprises a compressed gas.

49. (Currently Amended) The method of Claim 44 wherein the injected fluid comprises fuel.

50. Canceled.

51. (Currently Amended) A system for vectoring a primary flow comprising:

a nozzle having an inner surface and a throat, wherein the throat comprises a region within the nozzle of lowest cross-sectional area, the throat being situated in a path of the primary flow of fluid;

a plurality of primary injectors arranged along the inner surface of the nozzle, the plurality of injectors arranged to oppose the primary flow of fluid in a first intended vectoring plane, and wherein said primary injectors skew an effective throat or sonic plane within said nozzle.

52. (Currently Amended) The system for vectoring a primary flow of Claim 51 wherein the plurality of injectors is located proximate to the throat.

53. (Currently Amended) The system for vectoring a primary flow of Claim 52, further comprising:

a plurality of supplemental injectors located downstream of the throat and arranged along the inner surface of the nozzle to oppose the primary flow in a second intended vectoring plane.

54. (Currently Amended) The system for vectoring a primary flow of Claim 53 wherein the plurality of primary and supplemental injectors inject fluid asymmetrically, resulting in a change in a thrust vector associated with the primary flow of the fluid, the change in the thrust vector lying within the first and/or second intended vectoring plane.

55. (Currently Amended) The system for vectoring a primary flow of Claim 54 wherein the plurality of primary and supplemental injectors inject fluidic pulses.

56. (Currently Amended) The system for vectoring a primary flow of Claim 53, wherein said supplemental injectors are located proximate to the throat.

57. (Currently Amended) The system for vectoring a primary flow of Claim 56 wherein the plurality of primary and/or supplemental injectors inject fluid symmetrically, resulting in a change in a discharge coefficient for the nozzle.

58. Canceled.

59. (Currently Amended) The system for vectoring a primary flow of Claim 51 wherein the injected fluid comprises compressed gas.

60. (Currently Amended) The system for vectoring a primary flow of Claim 51 wherein the injected fluid comprises fuel.

61. (Currently Amended) The system for vectoring a primary flow of Claim 53, further comprising:

at least one controller, operable to direct said primary and/or supplemental injectors.

62. (Currently Amended) The system for vectoring a primary flow of Claim 61, wherein said at least one controller, directs said primary and/or supplemental injectors to inject fluidic pulses.

63. (Currently Amended) A method for vectoring a primary flow within a nozzle comprising the steps of:

injecting from a plurality of primary injectors a fluid opposed to the primary flow wherein said plurality of primary injectors are located proximate to a throat of the nozzle; and

injecting from a plurality of supplemental injectors fluid to oppose the primary flow, the plurality of supplemental injectors located downstream of the throat, wherein said injected fluid skews or varies an effective throat or sonic plane within the nozzle.

64. Canceled.

65. (Currently Amended) The method of Claim 63, wherein said supplemental injectors are located proximate to the throat.

66. (Currently Amended) The method of Claim 63 wherein fluid is injected as fluidic pulses.

67. (Currently Amended) The method of Claim 63 wherein the injected fluid comprises compressed gas.

68. (Currently Amended) The method of Claim 63 wherein the injected fluid comprises fuel.

69. Canceled.

70. Canceled.

71. Canceled.

72. Canceled.

73. Canceled.

74. Canceled.

75. (New) The system of Claim 31, wherein a location, size, and/or orientation of said effective throat are varied.

76. (New) The system of Claim 31, wherein a fluidic pulse from said at least one supplemental injector is operable to skew a boundary of the sonic plane of the primary flow towards said at least one supplemental injector.

77. (New) The system of Claim 31, wherein the primary flow has a temperature and wherein said pulsed secondary flow throttles the primary flow by decreasing the effective cross sectional area of the effective throat to control said temperature of the primary flow.

78. (New) A system for vectoring a primary flow in three dimensions by varying an effective throat or sonic plane within a ducted primary flow, comprising:

an opening for accepting the primary flow;

at least one primary injector located wherein said at least one injector is inclined to oppose the primary flow up-stream of said effective throat or sonic plane;

at least one supplemental injector and wherein said at least one supplemental injector is located downstream of the at least one primary injector, wherein said at least one supplemental injector opposes the primary flow in the intended vectoring plane, wherein said injector opposes the primary flow and wherein the at least one primary and supplemental injectors provide a flow field opposed to a subsonic portion of the primary flow in order to vector the primary flow; and

at least one controller operable to direct said at least one primary and supplemental injector to provide a flow operable to vary the effective throat or sonic plane.

79. (New) A method for vectoring a primary flow of fluid in a 3-D nozzle, comprising the steps of:

injecting fluid from a plurality of primary injectors wherein said injectors are opposed to a primary flow of the fluid and parallel to an intended vectoring plane, the plurality of injectors located proximate to a throat;

injecting fluid from a plurality of supplemental injectors opposed to the primary flow wherein said second plurality of supplemental injectors are located downstream of the throat, and wherein the fluid injected by said primary and/or supplemental injectors varies or skews in three dimensions an effective throat or sonic plane of said 3-D nozzle.

80. (New) A system for vectoring a primary flow comprising:

a three dimensional nozzle having an inner surface and a throat, wherein the throat comprises a region within the three dimensional nozzle of lowest cross-sectional area, the throat being situated in a path of the primary flow of fluid;

a plurality of primary injectors arranged along the inner surface of the three dimensional nozzle, the plurality of injectors are individually arranged to oppose the primary flow of fluid in a first intended vectoring plane, and wherein said primary injectors skew an effective throat or sonic plane within said three dimensional nozzle.

81. (New) A method for vectoring a primary flow within a three dimensional nozzle comprising the steps of:

injecting from a plurality of primary injectors a fluid opposed to the primary flow wherein said plurality of primary injectors are located proximate to a throat of the nozzle;

injecting from a plurality of supplemental injectors fluid to oppose the primary flow, the plurality of supplemental injectors located downstream of the throat and are individually aligned to oppose said primary flow , wherein said injected fluid skews or varies an effective throat or sonic plane within the three dimensional nozzle.

82. (New) A method for designing a nozzle, the method comprising:

analyzing a baseline configuration of the nozzle;

establishing a design study matrix of experimental configurations, the design study matrix comprising the experimental configurations, each of the experimental configurations being different by at least one value of one or more matrix variables;

conducting computational fluid dynamic analysis on the experimental configurations;

identifying effects of the matrix variables on behavior of the experimental configurations;

constructing an enhanced configuration; and

evaluating the enhanced configuration.